A Comparison of Blind and Seeing Subjects in ESP Tests

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A COMPARISON OF BLIND AND SEEING SUBJECTS IN *ESP* TESTS

MARGARET M. PRICE

ABSTRACT: A group of blind subjects were compared with a corresponding group of seeing subjects for performance in ESP tests. The two groups were mainly boys resident in institutions; the one a school for the blind, the other an orphanage. Similarity in choice of subjects, test conditions, and number of tests was approximated as far as possible. Sixty-six blind and 40 seeing subjects were tested and a total of 52,975 trials were given with an average of 5.61 hits per 25. The results as a whole were highly significant giving a critical ratio of 14.06. The blind subjects gave slightly but fairly consistently higher average scores than the non-blind. About one-fourth of the runs were made with cards enclosed in sealed opaque envelopes; and in both groups, these gave significantly higher results than did the open cards. About one-third of the total runs were made by the matching methods. These gave a slightly higher average score than with the calling procedure.

Miss Price was, at the time of the completion of this work, a graduate student in the Department of Psychology of Duke University and a research assistant in the Parapsychology Laboratory. In conjunction with Miss Margaret Pegram she published, in June, 1937, a report of an investigation of ESP with blind subjects.

A PREVIOUS investigation was reported[1] in which blind subjects were found to give highly significant results in tests for extra-sensory perception. An outstanding feature of this earlier investigation was the fact that a higher percentage of subjects gave significant deviations than had been reported for seeing subjects. Whether this constituted evidence that ESP capacity was more developed among the blind could not be determined on the basis of that study alone. No investigation had been made of a comparable institutionalized group of non-blind subjects. To provide a basis for comparison an investigation was projected among institutionalized boys of age and intelligence range similar to that of the blind subjects.

SUBJECTS

Blind group. The blind subjects tested in the earlier research were boys enrolled in the State School for the Blind in Raleigh, North Carolina (the criterion for entrance is inability to read pica type at a distance of one foot from the eyes). Ages ranged from 8 to 23 years. The superintendent of the school selected the 61 subjects as a representative group. There were, in addition, five subjects used who were employed in the Durham Workshop for the Blind. These ranged in age from 19 to 35 years.

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[1] PRICE, M. M. and PEGRAM, M. H. Extra-sensory perception among the blind. J. PARAPSYCHOL., 1937, 1, 143-155.

These 66 subjects varied educationally from first grade pupils to high school graduates. In degree of blindness, too, there was variation; there were a large number of partially blind subjects with wide differences in the amount of sight. Nine of the total number, however, had been entirely blind from birth; five more had become so during childhood.

Seeing group. The seeing subjects were boys enrolled in the Oxford Orphanage, Oxford, North Carolina.[2] They ranged in age from 8 to 16 years. Their school classification ranged from the fourth to the eleventh grade. The 40 subjects used were selected by the superintendent simply as representative children and without any reference to imagined ESP ability.

The two groups were the most nearly similar in age, educational level, and institutional life that it was possible under the circumstances to obtain. They seem sufficiently similar in constitution to allow a comparison of capacity for ESP.

METHODS

ESP tests were given with two types of card packs. One was the regular ESP pack, consisting either of the ESP cards shown in the frontispiece of this JOURNAL, March, 1937, or of the present commercial ESP cards. The tests with the blind were made with the former and those with the seeing with the latter. The second set consisted of ESP cards sealed in envelopes. The sealed packs were made by pasting a blank card over the face of an ESP card, sealing this double card in a brown coin envelope, and taping the outside of the envelope with broad strips of gummed paper. A code known only to the experimenter was written on the outside of the envelope. In order to insure the subject's having no opportunity to learn this code, the sealed cards were never checked within the sight of the subject but behind an opaque screen. (See photograph illustrating screen.)

In order to acquaint the blind subjects with the symbols, five sample cards with raised symbols, made by pasting figures cut from

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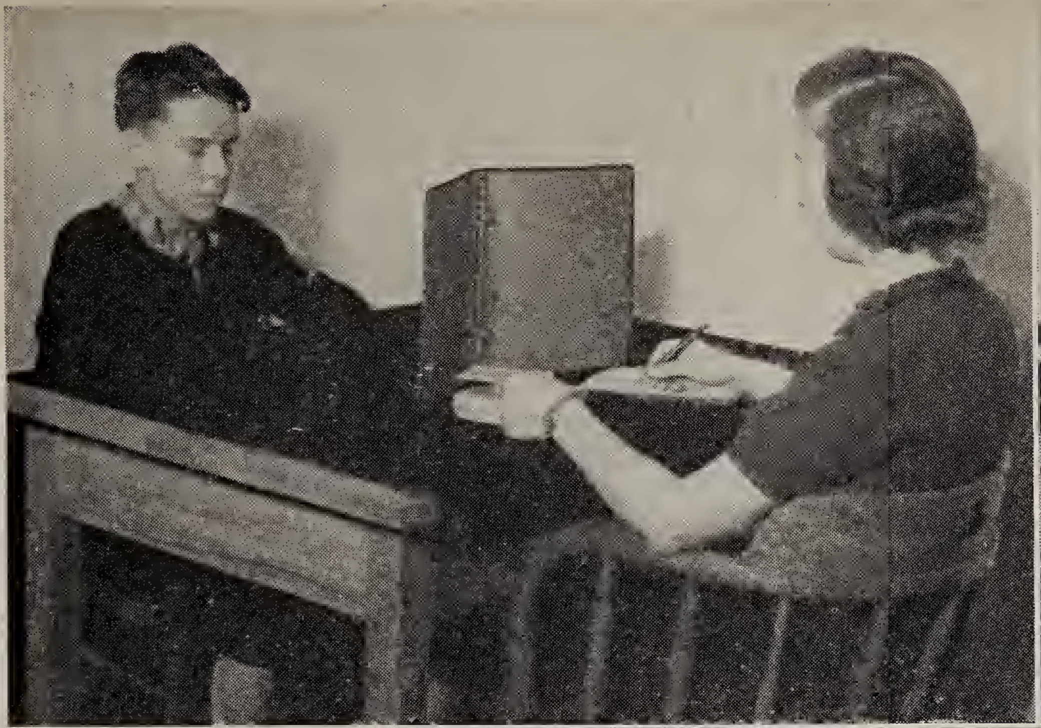
[2] The courtesy and cooperation of the institutions which aided in this work are gratefully acknowledged.



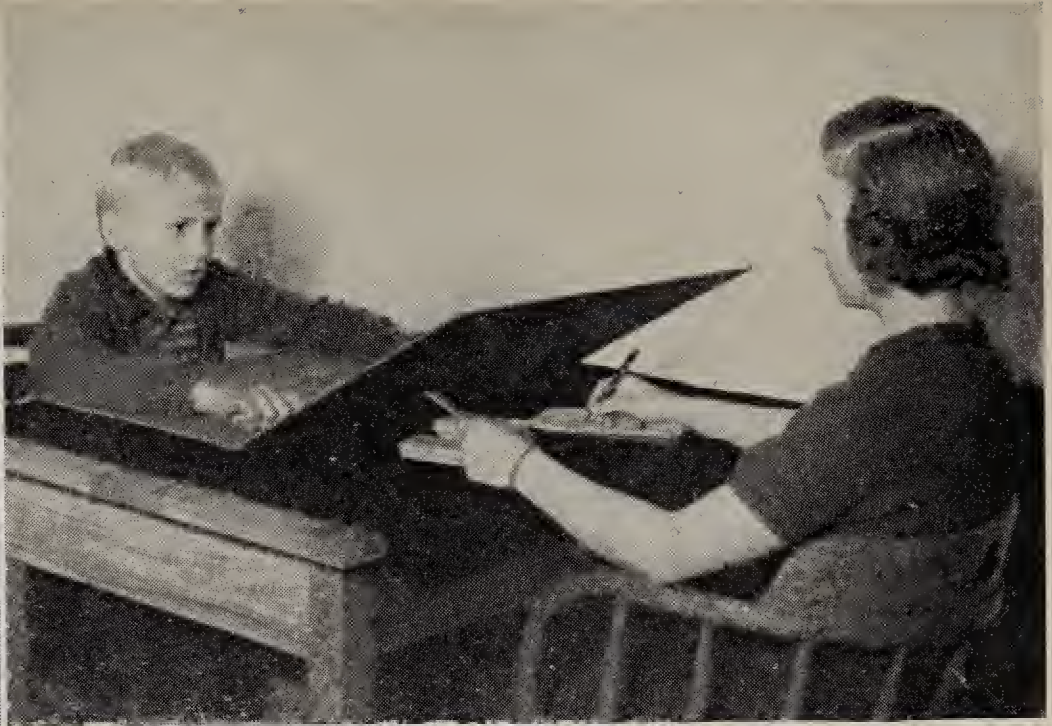


Plate 1 (above): Illustrating use of note-book as screen in BT tests given blind subjects.

Plate 2 (above): Illustrating screen used in BT tests with Oxford subjects. Cards, even when sealed, are handled and responses recorded out of sight of the subject.

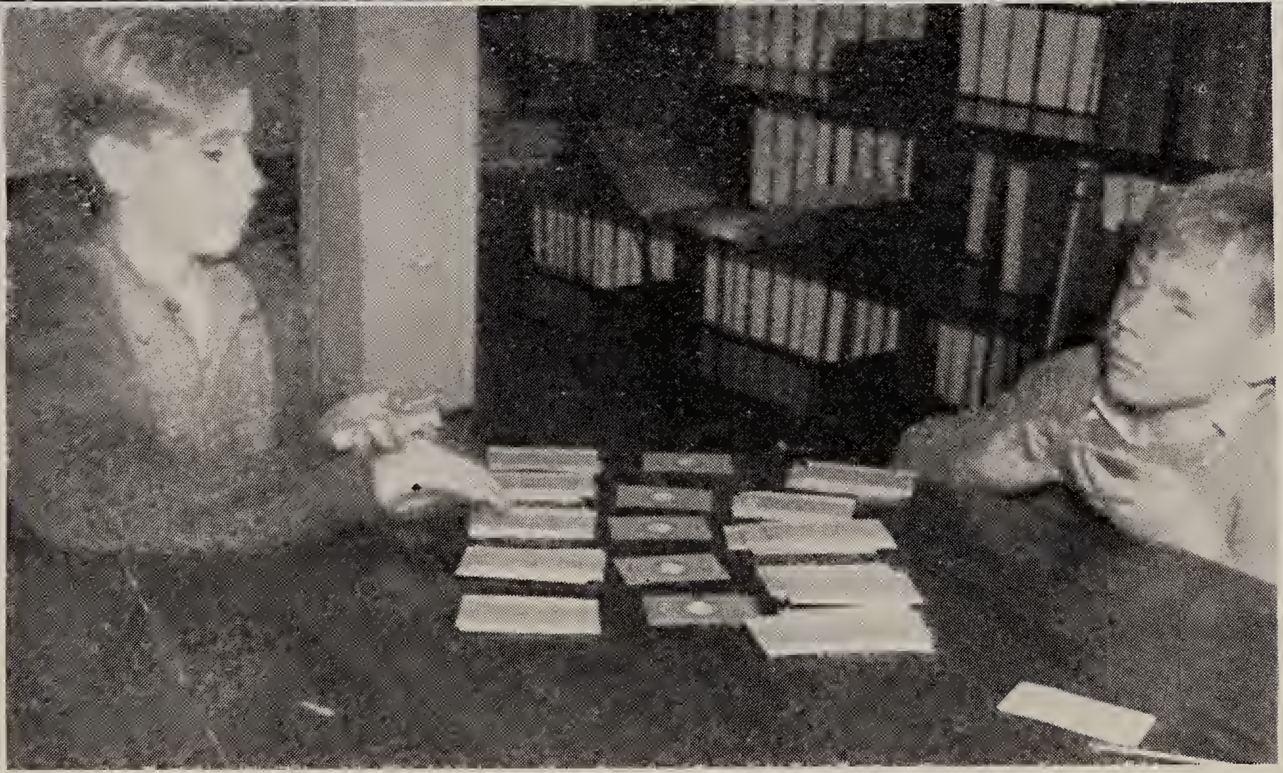


Plate 3: Blind children competing in a BM test with sealed cards. The order of the key cards (in center) is unknown to the subjects, who match the unknown sealed cards to the key cards.

cardboard on the cards, were presented to each subject before the tests were made.

Test Procedures with the Blind Subjects. For GESP (General Extra-Sensory Perception), the cards were shuffled and the pack was placed face down on the table before the subject but screened from his view. The experimenter removed the top card and looked at it while the subject attempted to call it. The card was then laid aside and the next card treated the same way. This was continued for the 25 calls. The screen concealed the cards but not the experimenter. (See photograph.)[3] This was found to be the most satisfactory method for introducing subjects to the experimental procedures because these subjects seemed to think it more "reasonable" to try to name the cards when the experimenter was looking at them. This method was largely confined to this introductory use. As in all procedures used, no indication of success or failure was given until the end of the run of 25 calls.

A shift to BT (Before Touching) was usually made with each subject near the end of the first experimental period. BT is similar to GESP except that the experimenter does not look at the cards until after the 25 calls have been made. Logically, in GESP both clairvoyance and telepathy are possible; in BT telepathy is presumably ruled out. In the BT tests, the cards were screened as in GESP.

Two matching techniques were used: (1) OM (Open Matching), (2) BM (Blind Matching). All the matching techniques have one feature in common: the subject makes his guesses by distributing the twenty-five target cards in five different piles. For OM and BM there are five key cards consisting of one each of the five symbols. These five cards are arranged in a row in front of the subject and he indicates his guess for each target card (of the pack in his hand) by placing it opposite the appropriate one of the five key cards.

In OM the key cards are placed face up and the subject is told the order of the cards. Cards with raised symbols were used as key cards for some of the subjects, particularly the younger subjects who were totally blind, so that they might touch the raised figures while the experimenter placed the cards opposite the key card indicated. This procedure was discontinued when the subject became thoroughly familiar with the order of the key cards.

BM differed from OM in that the key cards were placed face down, so that the subject attempted to match symbols whose order he had not been told and could not know himself through the senses against key cards that were likewise unknown. With this procedure, the cards with the raised symbols were never used.

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[3] The screen used was a 9″ x 12″ notebook open and standing on end, with the cards close behind it.

A few runs were made with a procedure called Match Piling or MP. For MP no key cards were used. The subject distributed the 25 cards in five piles and then, after all the cards had been placed he "named" the piles; that is, he touched each pile and said "This is the circle pile, that is the star pile," etc. These results are included with BM which the method most resembles (and the results of which they approximate in score average).

Sealed card packs were used in great part with all the methods except for GESP, which was done entirely with open card packs.

Test Procedures with the Seeing Subjects. The test procedures used with the seeing subjects were essentially those used with the blind. The differences were: (1) A larger screen (16″ x 24″; see photograph) was used in BT tests with the sealed cards than was used with blind subjects. (2) When unenclosed cards were used the subject was allowed to witness the checking and recording. (3) Very few GESP runs were made, and these only to introduce the subject to the tests.

With the seeing subjects most of the Open Matching tests were conducted with the sealed pack. A few runs were made with the regular pack with the 16″ x 24″ screen before the subject so that he could not see the cards he was handling. All Blind Matching and Match Piling tests were conducted with the sealed cards.

THE EXPERIMENTAL SITUATION

The atmosphere during the whole experiment was kept as informal as possible. The subjects viewed the experiment somewhat as a game in which each wished to do as well as he could. Candy rewards were occasionally given, but they were used infrequently so that they did not come to be goals in themselves. That is, the subjects did not as a rule expect or work for the reward. Competition was used when particular subjects seemed to respond well to it.

In the tests of the blind subjects, the boys were allowed to stand around while they were awaiting their turns and to talk among themselves as long as they did not interfere with the subject or seem to be having a disturbing effect on him. With the conditions of freedom that prevailed, it was necessary to have certain strictly enforced rules. (1) No person was allowed to stand beside or behind the experimenter. (2) For all GESP and BT work, a screen was used. The cards were held behind and close to it by the experimenter so that they were invisible to the subjects and spectators while the calls were being made. (3) The subject was kept at least four feet from the experimenter, usually seated at the opposite side of the table.

Additional precautions were taken even with the blind subjects. For unscreened work (i.e., for conditions other than BT and GESP), sealed packs were used in great part. The subjects were never told what symbol card was in any envelope. The code was never revealed to any subject; the code numbers were so small as to be indistinguishable by any blind subject. Three different packs of sealed cards with three different codes were used, and the sealed packs were checked behind the screen.

Similar normal precautions were taken with the seeing subjects, except that there was seldom a third person in the room. Whenever a second subject was present he was seated with the other across the table from the experimenter, and the two were allowed to work either alternately or competitively. The screening used in all this work was wide enough (24″) so that neither subject could see around it.

Recording and Checking. All of the results submitted for analysis in this paper are based upon tests in which there was a record made both of the call series and of the cards. In addition a certain amount of the testing was done with the matching methods in which only the score was recorded. Although these results will be mentioned below, they will not be used as the basis for conclusions.

The recording was done on the standard ESP record sheets recording call series and card series in parallel columns. Following the recording of the cards, each hit or coincidence was checked by encircling it and the number of hits recorded.

In order to determine whether the recording of the card series was in any way influenced by the proximity of the call series, a check was made to discover whether there was any departure from the even number of symbols (five each) expected in the card column. Since the standard pack contains five of each of the symbols, any departure from this might reasonably be supposed to be either an error in recording or an error in the composition of the pack. Only those runs are reported in which there is a perfect check obtained by this method.

It is recognized that if two errors are made in recording a run, they might conceivably cancel each other so far as this method of checking is concerned. However, since the cards were turned up and recorded one at a time and the danger of inversion of symbols thus removed, any such accidental inversion would be expected to occur only once in 25 such runs in which errors were made. Danger from this source then may well be dismissed from consideration.[4]

RESULTS

The analyses and comparisons submitted in this report are based upon a total of 2,119 runs or 52,975 single trials combining the results of tests given to both blind and seeing subjects, but consisting only of results which have been checked and rechecked by the methods described above. As will be seen by reference to Table I, these 2,119 runs gave a positive deviation of 1,296 and an average of 5.61 hits per 25. The critical ratio is 14.06; and the probability of chance occurrence about 10^{-44}.

The purpose in limiting this comparative study to scores capable of being rechecked was to exclude directly the hypothesis of recording error. However, since at the beginning of the experimental work the value of such a recheck was not foreseen many runs were made which could not be completely rechecked. The following accounting of these runs is made in order to complete the record of work done and especially to show that in excluding these runs from the comparison there was no unwitting exclusion of low scores.

There were 930 runs made which could not be rechecked. They averaged 5.65 hits per run (as compared with 5.61 for the rechecked work). Of these, 396 runs, with an average of 5.66, could not be rechecked because of the absence of records of either card or call series or both. The remaining 534 runs consisted of those made with ESP decks in which the cards were not equally distributed as to suit. The accuracy of the card series records could therefore not be determined by a recheck. All these unchecked runs are eliminated from consideration in the conclusions of this report. (On the hypothesis of recording error, however, it is interesting to note that if such errors occurred in this work, they must have occurred in those eliminated runs, yet the average is only .04 of a hit per run higher than the rechecked scores. Any motivational trend in the hypothetical errors must have been negligible.)

Comparison of blind and seeing subjects. Keeping entirely within the results of the rechecked series described above, it is found that the 2,119 runs consist of 1,387 runs made with the blind subjects and of 732 made with the non-blind. The totals are not exactly comparable

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[4] The rechecking of the results recorded in this paper was made by Mr. E. P. Gibson, record librarian of the Parapsychology Laboratory and additional sample rechecks were made by Mr. Burke M. Smith.

TABLE I

TOTALS FOR ALL SUBJECTS AND CONDITIONS

	Trials	Runs	Deviation	Average	S. D.	C. R.
Rechecked......	52,975	2,119	+1,296	5.61	92.06	14.06
Unrechecked....	23,250	930	+ 603	5.65	60.99	9.83
Total.......	76,225	3,049	+1,899	5.62	110.43	17.22

because the work with the seeing subjects was interrupted before its completion.[5] It will hardly be disputed, however, that the control series of 732 runs or 18,300 individual trials represents an adequate basis for comparative judgment. The distribution of these runs over the various types of procedures followed in the test is roughly comparable in both series, that with the blind and with the seeing subjects. A comparison of the averages, therefore, obtained from these two series, should throw some light upon the ESP capacities of the two groups of subjects compared; at least of their capacity to perform under these conditions.

It will be seen from Table II that while the 40 non-blind subjects produced an average of 5.54 for the 18,300 trials, the blind subjects gave an average of 5.64 in the 34,675 trials. The difference between these averages is not in itself significant by statistical measurement. It is of interest, however, to see that the superiority of the blind holds consistently through the various subdivisions of these series that are indicated in Tables II, III, and IV below.

The exceptions in Table V occur only with small numbers of runs; therefore, even though the difference favoring the blind is small, it may be safe to attach some importance to it because of this consistency of distribution. (It should be added that this difference in favor of the blind does not persist in the unchecked series.)

Comparison of open and enclosed cards. In the earlier report on the work with blind subjects mentioned above, a higher average was reported for the results of tests in which cards enclosed in opaque sealed envelopes were used than resulted from tests with open cards. A similar difference in favor of the use of enclosed cards was reported by J. B. Rhine.[6] These differences reported were small, consisting of .39 in the first instance and .30 in the second.

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[5] The circumstances of interruption (the ending of school) were not optional and accordingly the "optional stopping" modification recommended by Greenwood (J. PARAPSYCHOL., Sept. 1938) is not applicable.

[6] RHINE, J. B. ESP tests with enclosed cards. J. PARAPSYCHOL., 1938, **2,** 199-216.

TABLE II

COMPARISON OF BLIND AND SEEING SUBJECTS

Subjects	No. of Subjects	Trials	Runs	Deviation	Average	S. D.	C. R.
Blind.......	66	34,675	1,387	+ 895	5.64	74.48	11.93
Seeing......	40	18,300	732	+ 401	5.54	54.10	7.41
Total....	106	52,975	2,119	+1,296	5.61	92.06	14.06

A comparison of the results of the enclosed and the open card tests is offered in Table III, based entirely, as stated above, upon the rechecked series. This last feature accounts for the difference between the figures earlier reported for the blind subjects and those found in Table II. The earlier figures, however, gave a difference of .39 between the sealed and the open cards and the present table gives a difference of .36. Compared with this the averages for the seeing subjects differ by .41 in favor of the enclosed. It is suggestive to find such relatively similar figures resulting incidentally from analyses of these results based upon widely different groups, obtained by different experimenters, and indicating some advantage in performance with the cards enclosed in sealed opaque envelopes. Furthermore, the difference between the averages for the total of the open and enclosed card tests submitted in Table III is statistically significant.

TABLE III

COMPARISON OPEN AND ENCLOSED CARDS

Subjects	Open					Enclosed				
	Runs	Dev.	Ave.	S.D.	C.R.	Runs	Dev.	Ave.	S.D.	C.R.
Blind........	1,069	+603	5.56	65.36	9.23	318	+292	5.92	35.66	7.95
Seeing.......	505	+213	5.42	44.94	4.74	227	+188	5.83	30.13	6.24
Total.....	1,574	+816	5.52	79.34	10.28	545	+480	5.88	46.68	10.27

Comparison of matching and calling procedures. Keeping in mind both of the earlier comparisons, first, that of the blind and the seeing, and second, that of the open and enclosed cards, it is of interest to compare under these headings the results of the matching and calling procedures used in the tests. The matching tests are characterized by a manual mode of response and the calling by a vocal one. Under matching are included the open matching and blind matching; and under

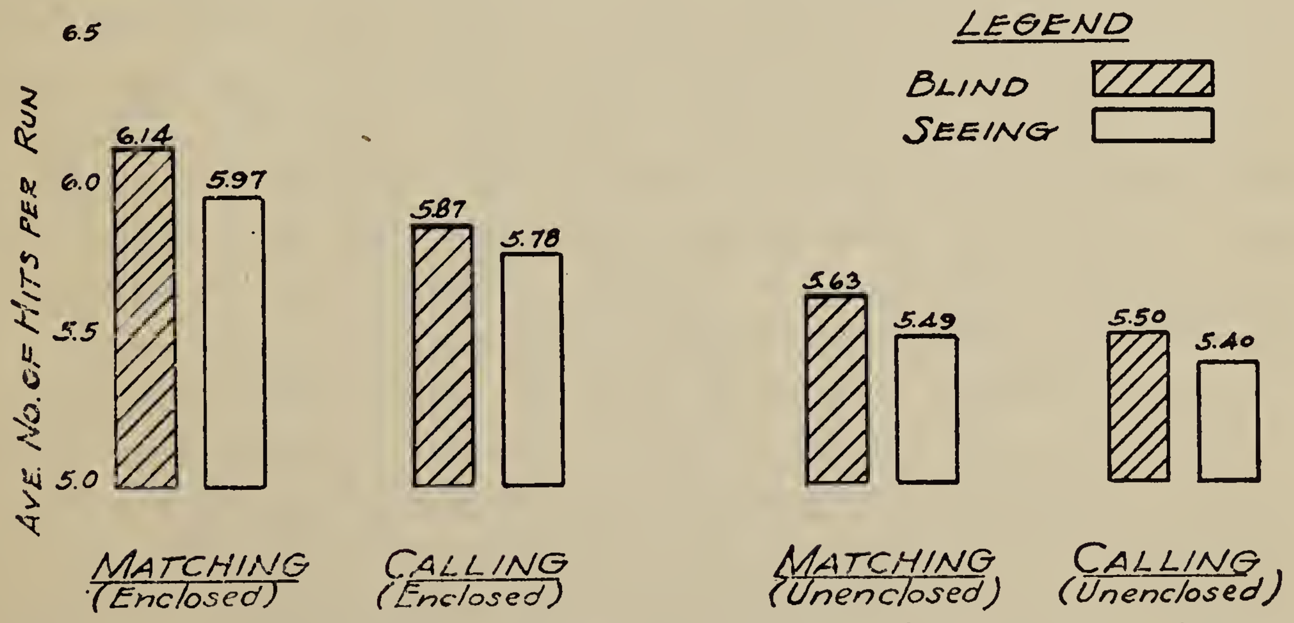
TABLE IV

COMPARISON OF MATCHING AND CALLING PROCEDURES

OPEN

Subjects	Matching					Calling				
	Runs	Dev.	Ave.	S.D.		Runs	Dev.	Ave.	S.D.	C.R.
Blind	483	+304	5.63	43.95	6.92	586	+299	5.50	48.41	6.18
Seeing	117	+ 58	5.49	21.63	2.68	388	+155	5.40	39.39	3.94
Total	600	+362	5.60	48.98	7.38	974	+454	5.47	62.41	7.27
	ENCLOSED									
Blind	57	+ 65	6.14	15.09	4.31	261	+227	5.87	32.31	7.03
Seeing	61	+ 59	5.97	15.62	3.77	166	+129	5.78	25.76	5.02
Total	118	+124	6.05	21.72	5.72	427	+356	5.83	41.32	8.62
Grand Total	718	+486	5.68	53.58	9.07	1,401	+810	5.58	74.86	10.82

calling, the BT and GESP. Both with the open and the enclosed card series with both blind and seeing subjects, the matching procedure yielded slightly higher averages than did the calling procedures. These differences, however, are in no instance significant. Further details may be found in Table IV and in Graph I. It will be seen that in these subdivisions of the data the relations indicated above persist throughout: namely, the blind performance was superior to that of the seeing subjects; the enclosed cards series gave better results than the open; and the matching procedure excelled over the calling. The only one of the three comparisons that gave a statistically significant difference, however, was that resulting in favor of enclosed cards over open.



GRAPH I. Representing in diagram the results of Table V. The words "matching" and "calling" describe the test procedures; "enclosed" and "unenclosed" refer to the cards used in the tests.

DISCUSSION

Unless in this report we have to do with acceptable evidence for extra-sensory perception the comparisons made from the results are meaningless. It is necessary then to review the issues that naturally arise when we consider whether we have to do with evidence for the hypothesis of extra-sensory perception. These issues will be considered under the headings of evaluative, experimental, and personal.

The critical ratio of 14.06 given by the research results taken in their entirety puts the issue of the chance hypothesis entirely aside. Unmistakably, something meaningful is happening in the response of the subject to these tests. The fact, too, that all the results of all of the subjects in all of the tests are included in Table I can leave no question of selection of data. The right to exclude from consideration in the comparisons of this report the results which could not be rechecked will not be questioned statistically.

Subjects were taken as they became available without any basis for a priori judgment of their probable success. Subjects were tested for their appointed test period and were not dismissed from further testing because of low scoring; though again this would have been permissible statistically.

On the experimental issue, the most plausible alternative hypothesis to that of extra-sensory perception would be that of the Hansen and Lehman hypothesis of involuntary whispering. This would apply however, only when the experimenter knew what the cards were and presumably might unconsciously convey the impressions to the subjects by auditory cues. Only one of the methods followed permitted knowledge of the cards by the experimenter. This was the GESP procedure. It will be observed by examining Table V that this procedure was followed in only a very small group of the tests. These GESP tests were given as a preliminary measure introducing the subject to the tests as a whole. For the other procedures, it is not easy to see how sensory cues could have functioned to assist the subject in his performance. If the cards were not sealed in opaque envelopes they were in the main kept behind screens. The only exception to this rule was in part of the matching work done by the blind subjects. It is obvious, however, that their visual handicap was sufficient to prevent them from taking any advantage of possible sensory cues on the backs of the cards which are difficult for good vision to detect. The fact, too, that the subjects scored better in the tests with enclosed cards than with the open cards is argument that they were not relying upon sensory cues in these tests.

The matching tests with the seeing subjects were conducted with screens in such a position as to prevent the subjects from seeing the backs of the cards that they were handling. In the calling tests (mostly BT), both the blind and the seeing subjects worked with the cards in the hands of the experimenter and behind the screen. This situation was maintained even with the totally blind subjects and with the enclosed packs. The average of 5.87 given by blind subjects with enclosed cards held behind a screen in a series of 244 runs should leave no question as to the adequacy of the exclusion of sensory cues in at least that section of the experiment. The experimenter in handling these enclosed cards kept them with the code marks on the envelopes inverted so that she could not herself become aware of the symbol on the envelope.

In view of the precautions taken in handling the records, first, in recording both calls and card series (followed by independent checks on card frequency), and second, in rechecking hits scored and the arithmetic involved, there is perhaps little more than can be done without introducing a second experimenter. As it happens, this too was done in both the work with the blind and the work with the seeing subjects at the Oxford Orphanage. The earlier report of the work with the blind included the work of Miss Margaret H. Pegram, graduate assistant in the Parapsychology Laboratory at Duke University. Miss Pegram was not only a witness in some of the writer's tests but also found in administering similar tests to some of the subjects used that she too obtained a significant positive deviation as a result.

The following year there was instituted by Dr. J. G. Pratt and the writer a joint experiment conducted at the Oxford Orphanage requiring the presence simultaneously of both experimenters during the tests. This experiment was reported (June 1938) in two sections, the first section representing a modification of the writer's usual procedure in handling the subjects. This resulted in insignificant deviations. The second section represents work in which the writer was allowed to follow her customary policy and under these conditions the scores for the joint experiment were approximately those of the Oxford work by the writer when working alone; namely 5.52 as compared to 5.54. Both experimenters were equally responsible for the recording, checking, and handling of the data.

The hypothesis of extra-sensory perception seems the only one adequate to account for the results of the study. It is in order then to consider and discuss the comparisons reported above.

In view of the results in Table II comparing the score averages of the blind and non-blind subjects, we can hardly be greatly impressed by the supposition that the blind possess markedly superior ability of the character of extra-sensory perception. At any rate, the order of difference, something less than 20% of the deviation of the non-blind subjects, is far from a striking one.

On the other hand, that there is a difference as consistently distributed through the subdivisions of the data as this proved to be is a fact of considerable interest and is one that, without taking too much for granted regarding its establishment, is worthy of some speculation. First, it should be pointed out that the difference, if not a chance one, may well be attributed to the writer herself. The work with the blind subjects took place a year earlier and it is not unreasonable to suppose that the experimenter herself may have changed in the meantime. The joint research with Dr. Pratt mentioned above showed certainly that there is a marked difference between experimenters and, indeed, showed that the experimenters can well obtain different results under different conditions as in the two sections of that work. So small a decline from the first work with the blind to the average obtained with the seeing subjects could well come within the scope of this possibility.

A second consideration that should be included in this discussion is the fact that the test procedures seemed to offer somewhat more entertainment to the blind subjects than to the non-blind. The curriculum for the seeing subjects offered a wider range of activities and by contrast the ESP tests were relatively less interesting than they presumably were to the blind. Interest is very probably of considerable importance.

A third suggestion is that blind subjects are less distracted by happenings in the surroundings. The lowering of the number of sensory distractions may favor extra-sensory concentration. This interpretation has been suggested to explain the slightly favored scoring of distance tests and of enclosed card tests reported by J. B. Rhine.[7] The hypothesis is that the complete removal of the cards from vision may result in the avoiding of conflict of attention between sensory and extra-sensory perception.

It seems clearly possible that any one of these three suggestions might apply to the small difference in results obtained and they may not represent all the possible hypotheses. Further research will thus be required to determine whether there be a reliable difference obtainable between the blind and the non-blind; and, if such a difference exists, whether these or other hypotheses are applicable.

[7] The effect of distance in ESP tests. J. Parapsychol., 1937, **1**, 172-184; and ESP tests with enclosed cards, J. Parapsychol., 1938, **2**, 199-216.

The apparent superiority of the enclosed card procedure is, as is indicated above, apparently in line with the superiority of blindness itself in the ESP tests. This work, together with that of J. B. Rhine mentioned above, is sufficient to warrant further pursuit of this question in its own right; namely, whether removing the object from all sensory contact effectively favors perception by extra-sensory means. The work with the blind, with distance, and with enclosed cards points strongly in this direction. On the other hand, motivated factors are not controllable in such tests and may be complicated. For example, when the enclosed cards were presented to the blind it was with a special challenge, the experimenter herself showing greater interest in the task. This was done to offset anticipated decline of interest in the subjects and overcome a feeling of futility in the face of the greater barrier the enclosing offered.

The slight superiority of matching over calling procedures recalls the fact that Woodruff and George[8] and Gibson[9] both reported higher results for open matching than with calling procedures, but had still lower results with blind matching. In both researches the combined matching methods would have averaged below the combined calling methods. There is, then, a difference in the present work in that combined matching methods are superior to combined calling methods and as will be seen from the data of Table V there is not the marked difference between blind and open matching which was reported by the other experimenters.

TABLE V

COMPARISON OF RESULTS OF SPECIFIC TEST PROCEDURES

Subjects	OPEN								SEALED							
	BT		GESP		OM		BM etc.		BT		GESP		OM		BM etc.	
	Runs	Ave.	Runs	Ave.	Runs	Ave.	Runs	Ave.	Runs	Ave.	Runs	Ave.	Runs	Ave.	Runs	Ave.
Blind.....	513	5.47	73	5.79	237	5.59	246	5.66	244	5.87	17	5.82	28	5.86	29	6.41
Seeing....	358	5.33	30	6.23	47	5.30	70	5.63	166	5.77	0	....	36	5.61	25	6.48
Total..	871	5.41	103	5.92	284	5.55	316	5.65	410	5.83	17	5.82	64	5.72	54	6.44

The difference in favor of matching may be attributable to the fact that the majority of the subjects in the present research were children or adolescents. The more game-like character of the matching procedures and the greater amount of muscular action involved might safely be regarded as adding a stronger appeal to those procedures than to the calling procedures.

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[8] WOODRUFF, J. L. and GEORGE, R. W. Experiments in extra-sensory perception. J. PARAPSYCHOL., 1937, 1, 18-30.

[9] GIBSON, E. P. A study of comparative performance in several ESP procedures. J. PARAPSYCHOL., 1937, 1, 264-275.

SUMMARY

The results of the tests for extra-sensory perception given to 66 blind subjects are compared with those given to 40 seeing subjects. Both groups were selected for similarity of age and institutional status. The total results are highly significant, giving a critical ratio of 14.06.

The average scores of the tests given the blind subjects are only slightly but fairly consistently higher than those obtained from the non-blind.

The averages obtained by both groups were higher when enclosed cards were used in the tests than when ordinary open cards were used. Both for the blind and the non-blind and both for the enclosed and unenclosed cards the score averages with the matching procedures were slightly higher than those of the calling procedures.

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DATE DUE	BORROWER'S NAME
5/29/73	Herbert Greenhouse
~~1-10-74~~	~~Jo Ann Toris~~

	HIGH		WIDE		THICKNESS
1523	9	inches	7	inches	½ inch
1524	10	"	7	"	"
1525	9	"	6	"	"
1526	9¾	"	7½	"	"
1527	10½	"	7⅜	"	"
1528	11	"	8	"	"
1529	12	inches	10	inches	½ inch
1530	12	"	9½	"	"
1932	13	"	10	"	"
1933	14	"	11	"	"
1934	16	"	12	"	"

Other sizes made to order.

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